Evaluate the effectiveness of meditation in terms of anxiety and stress among patients with heart diseases.

A

SYNOPSIS

Submitted for registration for degree of

PhD NURSING

Supervised by:

Dr.S. Victor devasirvadam

Professor cum HOD

submitted by:

Kirandeep kaur

Phd Scholer

Roll no :- 19380176010

DESH BHAGAT COLLEGE OF NURSING

DESH BHAGAT UNIVERSITY

MANDI GOBINDGARH (PUNJAB).

EVALUATE THE EFFECTIVENESS OF MEDITATION IN TERMS OF ANXIETY AND STRESS AMONG PATIENTS WITH HEART DISEASES.

"Meditation is not just for relaxation its primary purpose is to develop the capacity to respond skillfully and gracefully to life's difficulties as well as its joys".

Shyalpa tenzin Rinpoche

BACKGROUND OF THE PROBLEM

Human heart is still a mystery even after years of research into the biological process underlying its specific actions. In addition to controlling and coordinating vital life process, it also regulates various physiological and psychological functions. It is the human body's hardest working organ. Throughout life, it continuously pumps blood enriched with oxygen and vital nutrients, through a network of arteries to all parts of body tissue. Heart is merely not a pump-it is the head spring of every feeling and emotion, whether it is delight and excitement or gloominess and frustration. Mental and emotional tenseness disrupts the emotional heart whereas junk diet, insalubrious lifestyle and absence of physical exercise weakens the physical heart.[1]

Heart disease is the leading health problem in our nation. Women account for almost 50% 0f all cardiovascular deaths annually and 43% women compared with 24% men will die within one year following heart attack (Department of Health, Texas University).[2] Globally, according to Centre for Disease Control and prevention report (2007) approximately 61 million people in the United States have heart disease, and according to World Health Organization 29% of all deaths in worldwide are related to this condition. In India, 802 million people suffering from coronary heart disease between the age group 35 to 64 year.[3]

Kerala more and more people with cardiac ailments where heart disease account for over 40% of all deaths. Patients with ischemic heart disease fall into two large groups, patients

with Coronary artery disease who most commonly associated with stable angina and patients with acute coronary syndromes which is composed of patient with acute myocardial infarction with ST segment elevation Myocardial Infarction and those with unstable angina and non ST segment elevation Myocardial Infarction.[4]

Acute Myocardial Infarction (AMI) is one of the most widespread life threatening diseases in industrialized countries. In USA alone, about 1.5 million patients suffer from Acute Myocardial Infarction (about one patient in every 20 seconds). Incidence of Acute Myocardial Infarction is reported to be on the rise in South Asian countries including India and is estimated to be as high as in European population. According to World Health Organization (WHO) estimates, 16.7 million people around the globe die of Cardio Vascular Disease each year. This is over 29 percent of all deaths globally.[5]

In a medical or biological context stress is a physical, mental, or emotional factor that causes bodily or mental tension. Stresses can be external (from the environment, psychological, or social situations) or internal (illness, or from a medical procedure). Stress can initiate the "fight or flight" response, a complex reaction of neurologic and endocrinology systems. Stress can cause or influence the course of many medical conditions including psychological conditions such as depression and anxiety. Medical problems can include poor healing, irritable bowel syndrome, high blood pressure, poorly controlled diabetes and many other conditions. Stress management is recognized as an effective treatment modality to include pharmacologic and non-pharmacologic components.[6]

The physiological reaction to psychological stress, involving the hypothalamic–pituitary–adrenocortical and sympatho – adrenomedullary axes, is well characterized, but its link to cardiovascular disease risk is not well understood. Epidemiological data show that chronic stress predicts the occurrence of coronary heart disease (CHD). Employees who experience work-related stress and individuals who are socially isolated or lonely have an increased risk of a first CHD event. In addition, short-term emotional stress can act as a trigger of cardiac events among individuals with advanced atherosclerosis. A stress-specific coronary syndrome, known as transient left ventricular apical ballooning

cardiomyopathy or stress (Takotsubo) cardiomyopathy, also exists. Among patients with CHD, acute psychological stress has been shown to induce transient myocardial ischemia and long-term stress can increase the risk of recurrent CHD events and mortality. Applications of the 'stress concept' (the understanding of stress as a risk factor and the use of stress management) in the clinical settings have been relatively limited, although the importance of stress management is highlighted in European guidelines for cardiovascular disease prevention.[7]

Complementary strategies such as biofeedback, relaxation, music therapy and meditation have been explored to reduce anxiety in cardiac patients. The meditation based stress reduction emerged in 1979 at the university of Massachusetts's school of meditation based stress reduction incorporates the principles of mindfulness meditation.[8]

Meditation provides a means of self-monitoring and regulating one's arousal and detached awareness. It encourages, detailed non judging observation or witnessing of thoughts, perceptions, sensations and emotion which provides a means of self-monitoring and regulating one's arousal with detached awareness. It allows one to fully experience intense emotions without losing composure. The consequence of emotional balance is greater insight regarding one's thought feelings and actions. Insight in turn, promotes confidence and awareness. Meditation also facilitates a greater sense of calmness, empathy, and acceptance of self and others.[8]

NEED OF THE STUDY

Coronary Heart Disease (CHD) is the leading cause of death in India and the leading cause of death worldwide. The disease is the most common cause of sudden death, and is also the most common reason for death of men and women over 20 years of age.[9]Celebrating World Heart Day every year aims at awakening the people around the globe that heart disease are world's leading cause of death, claiming 17.2 million lives each year, causing economic consequences that arise from productivity reduction and increase in health care costs.[11] According to the Guinness Book Records, Northern Ireland is the country with the most occurrence of Coronary Artery Disease.[10]

The current prevalence in India is 7.59% in urban population and 3.70% in rural population. Prevalence is still greater in Southern India, prevalence of behavioral risk factors, central obesity, hypertension and diabetes among middle and high income young males in an urban industrial population in South India. Prevalence of these risk factors increased during the most productive years (25-44 years) putting them at risk of cardio vascular morbidity and mortality at younger age. [11]

India is registering 12% increase in incidence of World's coronary artery disease burden every year. As per the recent report at an international conference "Coronary Artery Disease tsunami in India". Like tsunami washing off the human lives, Coronary Artery Disease is also washing of the productive and energetic future of India.[12]

Anxiety after Myocardial Infarction is common as Myocardial Infarction is a life threatening disease .It is one of the earliest and most intense psychological responses to Acute Myocardial Infarction. It is a common and expected reaction to the many threats associated with Acute Myocardial Infarction. Patients suffering from Acute Myocardial Infarction are often in severe pain and faced with the threat of death, disability.[7]

Other psychological and social factors are also having a positive effect on the long-term outcomes in coronary artery disease patients who have suffered an Acute Myocardial Infarction. Lack of social support has been implicated in increased risk for cardiac mortality after Acute Myocardial Infarction and is independently predictive of mortality even after adjusting for disease severity.[13]

Persistent high level of anxiety has negative effect on patients with Myocardial Infarction. Severe anxiety causes disabilities and affects the physical and emotional functioning in the patients and this affects quality of life and disrupts their functioning.[14]

There are studies which reveal that depression and anxiety states represent high co morbidity with Acute Myocardial Infarction. It is estimated that one in six people will experience an episode of major anxiety at least once in their life, the number rises to one in two in people with heart disease. Life time prevalence rate of anxiety is 18 -20% with Acute Myocardial Infarction. The occurrence of anxiety and depression after Acute

Myocardial Infarction not only influence the prognosis of Acute Myocardial Infarction but their existence before Acute Myocardial Infarction also acts as a risk factor.[1]

Anxiety not only impairs health related quality of life, but also increases the risk of incident cardiac events even after controlling other cardiovascular risks. Patients of Acute Myocardial Infarction who develop anxiety are six times more likely than others to die within six months of, Acute Myocardial Infarction leading to 8-10 fold increase in death rates at 18 months. Anxiety is often present with depression and may be one of its manifestations.[7]

A cohort study conducted at an outpatient cardiology clinic in United States of America to examine the effect of anxiety on mortality and nonfatal Myocardial Infarction in patients with Coronary Artery Disease. 516 patients were administered with Keller Symptoms questionnaire annually. The results suggested that a high cumulative anxiety score associated with an increased risk of non-fatal Myocardial Infarction. Comparing the highest to lowest anxiety score, the age adjusted hazard ratio was 1.77(95% confidence interval1.03 to 3.78, p=0.004).[15]

A study empirically examined the relationships between anxiety and quality of life and concluded that anxiety related to decreased functional ability after Myocardial Infarction has been found to substantially reduce quality of life among survivors and their families.[16]

A meta- analysis conducted on mindfulness-based stress reduction programs on a wide spectrum of clinical populations included pain, cancer, heart disease and anxiety. Sixty four empirical studies were found but only 20 reports met criteria of acceptable quality or relevance to be included in Meta-analysis. The result suggested that overall both controlled and uncontrolled studies showed similar effect sizes approximately 0.5($p<.001$) with homogeneity distribution. The study concluded that mindfulness based stress reduction programs may help a wide range of individuals to cope with their clinical and non-clinical problems.[17]

A meta-analysis conducted to determine the efficacy of relaxation training (Jacobson's progressive relaxation, autogenic training, applied relaxation and meditation) for anxiety

problems and disorders were identified by comprehensive electronic searches with Pub med, Psych info and Cochrane Registers, by checking references of relevant studies and of other reviews. The results shows 27 studies qualified for the inclusion in the meta-analysis. As hypothesized, relaxation training showed a medium-large effect size in the treatment of anxiety. Cohen's d was .57 (95% CI: .52 to .68) in the within analysis and .51 (95% CI: .46 to .634) in the between group analysis. The results show consistent and significant efficacy of relaxation training in reducing anxiety. Efficacy was higher for meditation, among volunteers and for longer treatments.[18]

Madhav Goyal, MD, MPH[1] To conduct their review, the investigators focused on 47 clinical trials performed through June 2013 among 3,515 participants that involved meditation and various mental and physical health issues, including depression, anxiety, stress, insomnia, substance use, diabetes, heart disease, cancer, and chronic pain. They found moderate evidence of improvement in symptoms of anxiety, depression, and pain after participants underwent what was typically an eight-week training program in mindfulness meditation. They discovered low evidence of improvement in stress and quality of life. They also found no harm came from meditation.[19]

Coronary heart disease (CHD) is a major cause of mortality and morbidity all over the world. According to a report of World Health Organization (WHO) in 2005, cardiovascular disease (CVD) caused 17.5 million (30%) of the 58 million deaths that occurred worldwide.[20] While the prevalence and mortality due to CHD is declining in the developed nations. The same cannot be held true for developing countries. There has been an alarming increase over the past two decades in the prevalence of CHD and cardiovascular mortality in India and other south Asian countries. India is going through an epidemiologic transition whereby the burden of communicable diseases have declined slowly, but that of non-communicable diseases (NCD) has risen rapidly, thus leading to a dual burden. There has been a 4-fold rise of CHD prevalence in India during the past 40 years. Current estimates from epidemiologic studies from various parts of the country indicate a prevalence of CHD to be between 7% and 13% in urban and 2% and 7% in rural populations. Epidemiologic studies have shown that there are at present over 30 million cases of CHD in this country. The Global Burden of Diseases Study reported that the disability-adjusted life years lost by CHD in India during 1990 was 5.6 million in men

and 4.5 million in women; the projected figures for 2020 were 14.4 million and 7.7 million in men and women respectively.[21]

From clinical experience the researcher understood that patients diagnosed with heart diseases experience stress and anxiety about their future and it may further worsen their condition. Many related researchers uplifted search for a convenient and effective complimentary therapy to reduce anxiety among patients with heart disease, thus investigator selected meditation as an appropriate intervention for anxiety. Because meditation is an effective and miraculous technique of meditation against life's problems and situations. Stress, anxiety, anger, frustrations, and other negative emotions adversely affect patients minds and even bodies. Such negative emotions and actions should be dealt effectively and set-backs should be accepted without injuring our health. So the researcher felt the need for reducing anxiety and stress levels in patients and as meditation is economical, effective, noninvasive and non-pharmacological, it is the method chosen to reduce level of anxiety and stress.

STATEMENT OF PROBLEM

A study to evaluate the effectiveness of meditation in terms of anxiety and stress among patients with heart diseases at selected hospital of Moga Punjab.

RESEARCH QUESTION:

Does meditation bring a change in the level of anxiety and stress among patients with heart diseases?

SCOPE:

The scope of the study is meditation among patients with heart diseases to reduce the level of anxiety and stress at Moga medicity hospital Moga, Punjab.

OBJECTIVES OF THE STUDY

1. To assess the level of anxiety and stress of patients with heart diseases before administering Meditation.

2. To assess the anxiety and stress level of patients with heart diseases after administering Meditation.
3. To associate the pretest level of anxiety and stress among patients with heart disease and selected demographic variables in both the groups.
4. To correlate the pretest level of anxiety and stress among patients with heart diseases in both the experimental and control group.
5. To correlate the post test level anxiety and stress among patients with heart diseases in both the experimental and control group.

OPERATIONAL DEFINITIONS

1. **Effectiveness:** Effectiveness means producing a desired or intended result. In this study effectiveness refers to extend to which meditation reducing.

   Anxiety which is measured using Spielberg State Anxiety scale.

   Stress which is measured by homles and rahe stress scale.

2. **Meditation :**Meditation or contemplation involves focusing the mind upon a sound, phrase, prayer, object, visualized image, the breath, ritualized movements, or consciousness in order to increase awareness of the present moment, promote relaxation ,reduce stress and enhance personal and spiritual growth.

   In this study meditation is a non pharmacological intervention that has been used to develop the ability to control mental states and release physical distress, in this study it's given about 20 minutes twice a day for 8 consecutive days to attain the emotional stability and well being of patients with heart disease.

3. **Anxiety**: means feeling worried or nervous state.

4. In this study anxiety is the stressful situation that is experienced by the person as result of diagnosis of heart disease which is measured by using Spielberg's State Anxiety scale.

4. **Stress**: stress is a feeling of emotional or physical tension. It can come from any event or thought that makes you feel frustrated, angry, or nervous.

In this study stress is the emotional and physical tension that is experienced by the person as result of diagnosis of any heart disease which is measured by homles and rahe stress scale.

5. **Patients with heart disease:** It means that disease that are affecting the cardio vascular system.

   In this study clients who are diagnosed as having heart disease especially coronary heart disease and myocardial Infarction between the age group of 30-70 years, who are admitted in selected hospitals of Moga Punjab.

ASSUMPTIONS:

Assumptions are statements taken for granted or considered true, even though they have not been scientifically tested.[22]

The study assumes that:

1 Patients with heart disease experience anxiety and stress.

2 Meditation may help to reduce anxiety and stress in heart disease.

HYPOTHESES:

Hypothesis is a formal statement of the expected relationship between two or more variables in a specified population.[23]

H_1 : There is a significant difference in the level of anxiety and stress among patients with heart disease between pretest and posttest in the experimental group.

H_2: There is a significant difference in the post test level of anxiety and stress among patients with heart disease between pretest and post test in the experimental group and control group.

H_3: There is a significant association between the pre test level of anxiety and stress and selected demographic variable in both experimental and control group.

H_4: There is a significant relationship between pre test level of anxiety and stress in both experimental and control group.

H_5: There is a significant relationship between post test level of anxiety and stress in both experimental and control group.

CONCEPTUAL FRAMEWORK

A framework is the overall conceptual underpinning of a study. Conceptual framework is a set of coherent ideas or concepts organized in a manner that makes them easy to communicate to others. A framework can help us to explain why we are doing a project in a particular way.

Conceptual frameworks are structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at. Framework frames their questions and finds suitable literature. It is the tool the researcher uses to guide their enquiry. It will guide the researcher in his data collection. It enables the researcher to find the links between existing literature and his own research goals.

Conceptualization is the process of forming ideas, which utilize and form a conceptual framework for the development of a research design. It is abstract logical structure which enables the researcher to link the findings to nursing body of knowledge.

The conceptual frame work of the present study is based on **Ludwig Von Bertalanffy** general system theory.[24] Bertalanffys contribution to system theory is best known for his theory of open systems. It includes input, throughput, output and feedback.

Input

Input consists of the energy and raw material transformed by the system.

In this study, input is meditation therapy for reducing anxiety and stress.

Throughput

Throughput is the process use by the system to convert raw materials or energy from the environment in to products that are usable by either the system itself or the environment.

In this study, throughput will be administration of meditation. Patient's performed 20 minutes meditation twice a day. There is change in reaction level of the patients. Patients feels calm and more comfortable.

Output

The output is the product or service which results from the systems throughput or processing of technical, financial, social and human input.

In this study, output is either change in anxiety and stress level which is assessed by a structured questionnaire.

Feedback

Feedback is the information about some aspect of data and energy processing that can be used to evaluate and monitor the system and guide it for more effective performance.

REVIEW OF LITERATURE

A literature review is a description and analysis of the literature relevant to particular field of topic. It gives an overview of what has been said, who the key writers are there, what are the prevailing theories and hypothesis, what questions are being asked, and what methods and methodologies are appropriate and useful.

A literature review is a body of text that aims to review the critical points of knowledge on a particular topic of research.

Literature review is defined as a broad, comprehensive, in depth, systematic and critical review of scholarly publication, unpublished printed or audio visual materials and personal communications.[22]

Following outline presents the sequence of topics covered in the literature review for the present study:

- Section I: Literature related prevalence of heart disease and impact on heart disease.
- Section II: Literature related to anxiety and stress in heart disease.
- Section III: Literature related to meditation.
- Section IV: Literature related to effectiveness of meditation on anxiety and stress in heart disease.

LITERATURE RELATED TO PREVALENCE OF HEART DISEASE AND IMPACT OF HEART DISEASE

A population based epicardian cohort study conducted to estimate ten-year fatal and non fatal Myocardial Infarction incidence in elderly population in Spain, more than 85% of coronary heart disease deaths occur in adults older than 65 years: A population 3729 people older than 64 years old, free of previous myocardial infarction, was established in 1995 in three geographical areas of Spain. Any case of fatal and non-fatal myocardial infarction was investigated until December 2004 using the "cold pursuit method". The results suggested that men showed a significantly ($p < 0.001$) higher cumulative incidence of myocardial infarction (7.2%; 95%CI: 5.94-.54) than women (3.8%; 95%CI: 3.06-4.74. Adjusted mortality rates were also higher in men than in women ($p < 0.001$), being three times higher in the age group of 85 years old than in the age group of 65-74 years old ($p < 0.001$)The study concluded that incidence of fatal and non-fatal

myocardial infarction is high in the Spanish elderly population. Men show higher rates than women, but gender differences diminish with age.[25]

A cross-sectional study was done to assess the prevalence as well as association of risk factors with the Coronary Artery Disease in young as well as old patients and to make a comparative evaluation of the pattern in males and females. Setting of the study is G.B. Pant hospital, New Delhi. The results suggested that mean age for Coronary Artery Disease comes out to be 50.4 and 28.6% patients were of the younger cohort so suggesting the rapidly increasing prevalence of Coronary Artery Disease in young Indian patients. The study concluded that Coronary Artery Disease is rapidly affecting the young India and steps must be taken to reverse this reversing trend.[26]

A study was conducted to examine the prevalence of Myocardial Infarction and conventional risk factors in Greek adults between 2002 and 2006. Self reported data from surveys given in Salamis during two election days in 2002 and 2006 were analyzed. The same sampling method and procedures were used in both surveys. The study sample included 2805 and 3478 subjects (>20 years) in 2002 and 2006, respectively, with similar age and sex distribution. The results suggested that the prevalence of Myocardial Infarction increased from 4.1% (men 6.3%,women (2.9%) in 2002 to 4.8% (men 7.3%,women 2.2%) in 2006 (p=0.18).These finding shows that in Greek population, prevalence of Myocardial Infarction continues to rise at approximately 4% per year.[27]

According to WHO report Myocardial Infarction is one of the leading cause of death in India. The prevalence of Myocardial Infarction has increased from 40 per 1000 in 1968 to nearly 110 per 1000 in 2001. The prevalence of coronary heart disease in urban population has increased from 3.5% in 1966 s to 9.5%in 1990 s and in rural areas it has been increased from 2% in 1970 s to 4% in 1990s. In the year 2005 it was estimated that 30% of deaths in India were due to coronary syndrome.[28]

LITERATURE RELATED TO ANXIETY AND STRESS IN HEART DISEASE

A study to find out the effect of anxiety on quality of life of patients with Myocardial Infarction. Published literature were searched using individual or combination of key words: anxiety, quality of life and Myocardial Infarction in following data bases; Pub Med, Proquest ,and Google scholar .Majority of studies found that patients with Myocardial Infarction high level of anxiety persisting over months to years affecting quality of life. High level of anxiety was correlated with the poorer quality of life. The study concluded that anxiety affects negatively in quality of life in patients with Myocardial Infarction .Identification of the level of anxiety can help plan effective nursing management of Myocardial Infarction.[29]

A study regarding anxiety and well being among acute coronary syndrome patients. A 2x 2 x 2 factorial group design was employed on 120 subjects to study the anxiety and well being among acute coronary syndrome patients. The two types of acute coronary syndrome patients, i.e. .Myocardial infarction and unstable angina were 19 taken for the study. 60 sample was randomly selected for the present study 30 were having myocardial infarction and 30 were having unstable angina, within the age range of 55-74 yrs. State-Trait Anxiety Inventory was administered .Mean scores on state anxiety for myocardial infarction patient (50.50) were higher than the mean for unstable angina patients (48.60). The higher mean score on state anxiety for myocardial infarction patients suggest that patients having myocardial infarction experience more anxiety than unstable angina patients at the time of discharge.[1]

A study regarding frequency of anxiety and psycho social stressful events in patients with acute myocardial infarction. The objectives were to look for the frequency of anxiety and psycho social events in patients with acute myocardial infarction without complications who presented to the coronary care unit of Cardiology department, Lady reading hospital Peshawar and 200 healthy controls among relatives of patients were assessed on Holmes Rahe Perceived Stress Scale and Hospital Anxiety Depression Scale for the presence of anxiety and stressful life events preceding Acute Myocardial Infarction. Results stated that 63% of the patients had increased level of anxiety.[30]

Considerable progress has been made during the past decade in research on cardiovascular effects of stress. Early-life stressors, such as childhood abuse and early

socioeconomic adversity, are linked to increased cardiovascular morbidity in adulthood. Our updated meta-analyses of prospective studies published until 2011 show a 1.5-fold (95% confidence interval 1.2–1.9) increased risk of coronary heart disease among adults experiencing social isolation and a 1.3-fold (1.2–1.5) excess risk for workplace stress; adverse metabolic changes are one of the underlying plausible mechanisms. Stress, anger, and depressed mood can act as acute triggers of major cardiac events; the pooled relative risk of acute coronary syndrome onset being preceded by stress is 2.5 (1.8–3.5) in case-crossover studies. Stress is also implicated in the prognosis of cardiovascular disease and in the development of stress (takotsubo) cardiomyopathy. A major challenge over the next decade is to incorporate stress processes into the mainstream of cardiovascular pathophysiological research and understanding.[31]

Psychological determinants are now regarded as important factors that influence health in general and cardio-metabolic pathways in particular. Indeed, the biological, psychological and cognitive response to chronic stress may play a role in heart disease as a trigger or as an independent factor influencing cardiac outcomes. There is now considerable robust scientific evidence in support of this hypothesis, and it is now time to take account of this psychobiological interplay. In this context, cardiac rehabilitation appears to be the right time to manage psychological disorders in heart disease patients, in order to help them reduce the deleterious effects of stress on their minds and bodies. Further studies are necessary to explore the impact of psychological therapy on cardiac outcomes in patients with cardiac disease.[32]

LITERATURE RELATED TO MEDITATION

A meta analysis of randomized controlled study was conducted regarding meditative therapies for reducing anxiety. Major medical data bases were searched thoroughly with key words related to various types of meditation and anxiety. Over 1,000 abstracts were screened and 200 full articles were reviewed. The Boutron check list to evaluate a non pharmacological trial was used to assess study quality. The results suggested that a total of 36 randomized controlled trials were included among this 25 studies reported statistically superior outcomes in the meditation group compared to control. ($P<0.001$).This review demonstrates efficacy of meditative therapies in reducing anxiety

symptoms, which has important clinical implications for applying meditative techniques in treating anxiety.[33]

A prospective study conducted to identify whether meditation is an intervention for depression and anxiety among cancer patients. It involves sixteen participants with a history of cancer and five careers of people with cancer recruited from August 2008 to February 2009 through calls to the cancer council south Australia help line. Participants were assessed for anxiety before and after undergoing course of meditation. Anxiety and depression measured by Spielberg State Anxiety Inventory and Beck Depression Inventory. The results suggested that there were significant reduction in anxiety and depression (P=0.001, P= 0.012).The study concluded that meditation appears to be an efficacious intervention for use among people affected by cancer who also experiences symptoms of depression and anxiety.[34]

A randomized controlled study conducted to compare the effectiveness of mindfulness based stress reduction programs versus aerobic exercise in social anxiety was undertaken and the participants were assigned to mindfulness based stress reduction group and aerobic exorcize group. The study results suggested that the meditation practice was associated with decrease in negative emotion and social anxiety symptom severity.[35]

LITERATURE RELATED TO EFFECTIVENESS OF MEDITATION ON ANXIETY AND STRESS IN HEART DISEASE

A study conducted regarding feasibility and effectiveness of a brief Meditation-Based Stress Reduction (MBSR) intervention for patients diagnosed with or at risk for coronary heart disease The objective of this study was to gather preliminary information regarding the feasibility of implementing a brief meditation-based stress management program for patients with Coronary Heart Disease, and those at high risk for Coronary Heart Disease. The secondary aim of this study was to investigate the possibility that such an intervention might reduce depression, as well as perceived stress, anxiety, and hostility, while improving general health scores. The overall feasibility results indicated that this

MBSR intervention was highly feasible with regard to both recruitment and retention of participants. In fact, 40% of patients requested further training. In addition, after completion of the 4-week intervention, participants reported significant reductions in depression and perceived stress. In conclusion, the present study demonstrated that the brief meditation-based stress management program was well-received by patients and can successfully be used as a supportive program for patients at risk or diagnosed with Coronary Heart Disease.[36]

A randomized controlled study conducted by a spiritual retreat for depression in acute coronary syndrome patients to compare the effects of a nondenominational spiritual retreat, Medicine for the Earth (MFTE), on depression and other measures of well-being six- to 18-months post acute coronary syndrome (ACS). Acute Coronary Syndrome patients were recruited via local and national advertising (n = 58 enrolled, 41 completed). The four-day medicine for the earth intervention included guided imagery, meditation, drumming, journal writing, and nature-based activities. The four-day non denominational spiritual retreat included nutrition education, exercise,and stress management. Both retreat groups received follow-up phone coaching biweekly for three months. Validated self-report scales of depression, spiritual well-being, perceived stress, and hope were collected at baseline, immediately post-retreat, and at three and six months. The results suggested that depression was not significantly different among groups ($P = .21$). However, the Medicine for the Earth group had the highest depression scores at baseline and had significantly lower scores at all post intervention time points ($P \leq .002$). Hope significantly improved among Medicine for the Earth group participants, an effect that persisted at three- and six-month follow-up ($P = .014$).[37]

Stress is an imminent public health problem and one of the approaches to address this problem is through mindfulness-based stress reduction. A total of 17 interventions from January 2008 to December 2013 looked at mindfulness-based stress reduction and its efficacy in decreasing stress in healthy individuals. Of these reviewed studies, all interventions were able to find some positive effects in psychological or physiological outcome measures related to stress. Despite the limitations of not all studies using

randomized controlled design, having smaller sample sizes, and having different outcome measures, mindfulness-based stress reduction is a promising modality for stress management among healthy individuals. All practitioners teaching stress management must include mindfulness-based stress reduction as one of the approaches for stress reduction.[38]

Research gaps:

The researcher surveyed the literature and revealed that there is no research on the effects of meditation in terms of anxiety and stress among patients with heart disease There are be deficient in of studies hence gap can be refined.

RESEARCH METHODOLOGY

Research methodology is a way to systematically solve problems. According to Sharma research methodology involves the systematic procedures by which the researcher starts from initial identification of the problem to its final conclusions. The role of methodology is to carry on the research work in a scientific and valid manner. The methodology consists of procedures and techniques for conducting a study.

Research methodology includes research design, approach, setting, population, sample, sampling technique, description of tool, method of data collection and plan for data analysis.

RESEARCH APPROACH

According to Treece the approach is the umbrella that covers the basic procedure for conducting a research. Evaluative research is an applied form of research that involve finding out how well a programme, procedure or policy is working. Its goal is to assess and evaluate the success of a programme.

In view of the nature of the problem under study and to accomplish the objectives of the study evaluative approach is found to be appropriate to describe the effectiveness of meditation on the level of anxiety and stress. Quantitative evaluative approach is use in this study.

RESEARCH DESIGN

The research design is the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process. It is the architectural backbone of the study.[22]

For the present study quasi experimental (pretest post test control group) research design adopted for the study.

O_1XO_2

KEY

O1 - Pretest anxiety and stress 1st day by using Spielberg State Anxiety Scale and Holmes and rage perceived stress scale.

X - Meditation (20 minute twice a day for 1 week morning and evening).

O2 - Post test anxiety and stress on 8th day by using Spielberg State Anxiety Scale and Holmes and rage perceived stress scale.

VARIABLES UNDER THE STUDY

Variables are qualities, properties, or characteristics of persons, things, or situations that change or vary.[23]

The variable mainly included in this study is independent and dependent variable.

Independent variable: It is a stimulus or activity that is manipulated or varied by the researcher to create the effect on the dependent variable. Meditation is the independent variable in this study.

Dependent variable: It is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain .Anxiety and stress is the dependent variable in this study.

SETTINGS OF THE STUDY

The setting is selecting based on acquaintance of the investigator with the institution, feasibility of conducting the study, availability of the sample, permission and proximity of the setting for investigation. The study will be conducted at the cardiac unit at Moga Medicity hospital Moga. It is the well-established hospital in Moga. It has all specialty departments. This is one of the main cardio thoracic unit is serving the people of northwestern Punjab with special cardiac services cardiac catheterization, angioplasty and cardiac surgeries. The Hospital is equipped with bed strength of 150 beds. Cardio thoracic ward is equipped with bed strength of 20. The accessible population comprises of heart diseases clients in cardiothoracic unit, at moga medicity In 2020 -15000 OP patients, 700 in patients treated and 200 surgery have done in department of cardio thoracic unit.

POPULATION

Population is the set of people or entities to which result of research are to be generalized.[22]

TARGET POPULATION

All patients with heart disease especially coronary heart disease and Myocardial Infarction.

ACCESSIBLE POPULATION

The accessible population is the aggregate of cases that conform to designated criteria and that are accessible for study. In this study, patients with heart diseases in selected hospital.

SAMPLE AND SAMPLING TECHNIQUE

Sample may be defined as representative unit of a target population, which is worked upon by researchers during their study.

200 patients with heart diseases and those who met the inclusion criteria were selected. 100 patients in the experimental group and 100 patients in the control group.

Non Probability sampling (convenient simple technique) will be used to select 200 patients with heart diseases in selected hospital.

INCLUSION CRITERIA

Those patients who are

Newly diagnosed as heart diseases specially coronary heart disease and Myocardial Infarction and admitted at selected hospital Moga Punjab.

1. Willing to participate in the study.
2. Able to understand either Punjabi, Hindi and English.
3. In the age group of 30-70 years.

Exclusion criteria

Those patients who are

1. Diagnosed as other disease except heart disease specially coronary heart disease and Myocardial Infarction.
2. Unconscious or terminally ill patients.
3. Old case of known coronary heart disease and Myocardial Infarction.
4. On anxiolytic or psychotropic drugs.

TOOL

DEVELOPMENT/SELECTION OF TOOL

Data collection instruments are the strategy or system used to gather information from participants, programmes, and other elements of evaluation.

By reviewing the literature and by consulting and discussing with experts, the tool will be prepare. The tool consisted of

Part A - Questionnaire for demographic variables

Part B - Spielberg's Anxiety Scale.

Part C Holmes and rage perceived stress scale.

DESCRIPTION OF THE TOOL

Part A: It consisted of 9 items for obtaining information regarding age, gender, educational status, occupation, family monthly income, type of family, area of residence, life style and systemic illness.

Part B : Spielberg's Anxiety Scale to assess the level of anxiety.

Part C: Holmes and rage perceived stress scale to assess level of stress.

CONTENT VALIDITY

Content validity will be based on the extent to which an instrument adequately represents the universe of content for the concept being measured.

The content validity will be established in consultation with seven experts in the field of Medical Surgical Nursing, Cardiology and Psychology. The experts will be requested to give their opinions regarding relevance, accuracy, appropriateness of the items for further modifications.

RELIABILITY OF THE TOOL

Reliability is the degree of consistency with which the attributes or variables are measured by an instrument.

Test –retest method will be used to assess the reliability of the instrument. Karl Pearson's Coefficient Correlation will be calculated.

PILOT STUDY

A pilot study is referred to a small-scale preliminary tryout of the method to be used in an actually large study, which acquaints the researcher with problems that can be corrected in proportion for the large research study or is done to provide the researcher with an opportunity to try out the procedure, method, and tools of data collection.[22]

A pilot study will be conducted in selected hospital of moga Punjab. Convenient sampling will be as used to select 20 subjects, 10 in the experimental group and 10 in the control group.

DATA COLLECTION PROCESS

Data are the observable and measurable facts that provide information about phenomenon under study. Permission will be obtained from selected hospital of Moga Punjab. 200 subjects will be taken for the study. Prior informed consent will be taken from the study subjects before commencing the study. On the first day pre-test anxiety and stress level will be measured after that meditation for 20 minutes twice in a day for one week given. After one week post test will be conducted on 8^{th} day morning/evening by using Spielberg's Anxiety Scale to assess the level of anxiety and Holmes and rage perceived stress scale to assess level of stress.

PLAN FOR DATA ANALYSIS

Data analysis is a systematic organization and synthesis of the research data

and testing of research hypothesis using data.

EXPECTED OUTCOMES

- The study will evaluate the effect of meditation in terms of anxiety and stress among patients with heart disease.
- The findings of the study will help to plan and implement of meditation in terms of anxiety and stress among patients with heart disease in hospitals.

PROTECTION OF HUMAN RIGHTS

Human rights are commonly understood as inalienable fundamental rights to which a person is inherently entitled simply because she or he is a human being. Hence a written consent of the subjects will be taken before the study is started and debriefing will be done after the study is completed. Confidentiality and anonymity of the study subjects will be maintained throughout the study

QUESTIONNAIRE FOR DEMOGRAPHIC VARIABLES

Instructions:

- Tick the ( ) appropriate option**.**

Note:

- The information collected from you shall be used for research purpose only. Your confidentiality and anonymity will be maintained throughout the study.

The demographic data of the sample was presented using frequency, tables and graphs. The level of anxiety and stress of patients with heart disease was presented by using descriptive statistics mean & standard deviation in pre-test and post test.

The pre-test and post-test anxiety and stress score will be compare by using a paired " t" test. The association of anxiety score and stress score with selected demographic variables will be tested by independent t test and ANOVA. The level of anxiety and stress among patients with heart disease before and after the administration of the meditation will be calculated by using frequency, percentage, & standard deviation.

PART A – QUESTIONNAIRE FOR DEMOGRAPHIC VARIABLES

The respondents are asked to read and put ( ) in appropriate column in each question.

1. Age of the client

a. 31-40 yrs ☐

b. 41-50 yrs ☐

c. 51-60 yrs ☐

d.61-70 yrs ☐

2. Gender

a. Male ☐

b. Female ☐

3. Educational status of the client.

a. No formal education ☐

b. Primary ☐

c. high school ☐

d. Graduate ☐

4. Occupation of the client

a.Government ☐

b.Private

c. Self employed ☐

d. Unemployed

5. Income

a. < 5000

b. 5001 - 10000

c. 10001 – 15,000

d . >15,001

6. Area of residence

a. Urban

b. Rural

7. Type of family

a. Nuclear family

b. Joint family

c . Extended family

8. Life style

a. Smoking

b. Alcoholism

c. Physical inactivity

9. Systemic Illness

a. Diabetes Melitus ☐

☐

b. Hypertension ☐

c. Hypercholestremia ☐

☐

d. Hyperthyroidism ☐

☐

PART B

SPIELBERG ANXIETY SCALE

DIRECTIONS: A Number of Statement which people have used to describe themselves is given below. Read each statement and then circle the response option to the right to indicate how you feel right now, that is, at this moment. There is no right or wrong answers. Do not spend too much time on any one statement, but give the answers which seems to describe your present feelings best.

	Not at all	Somewhat so	Moderately so	Very much so
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel tired	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying				

about possible misfortunes	1	2	3	4
8. I feel rested	1	2	3	4
9. I feel anxious	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I am confused	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel over-excited and rattled	1	2	3	4
19. I feel joyful	1	2	3	4
20. I feel pleasant	1	2	3	4

SCORE

NORMAL ANXIETY - 1-20

MILD ANXIETY - 21-40

MODERATE ANXIETY - 41-60

SEVERE ANXIETY - 61-80

Tool III

Perceived stress scale (holmes and rahe perceived stress scale)

Item no	Questioner	Never 0	Almost never 1	Sometimes 2	Fairly action 3	Very often 4
1.	In the last week how often have you been upset because of something that happen unexpectedly					
2.	In the last week how often have you felt that you were unable to control the important things in your life.					
3.	In the last week how often have you felt nervous and stressed.					
4.	In the last week how often have you dealt successfully with irritating life hassles					
5.	In the last week how often have you felt that you were effectively					

	coping with important changes that were occurring in your life?					
6.	In the last week how often have you felt confident about your ability to handle your personal problem?					
7.	In the last week how often have you felt that things were going your way?					
8.	In the last week how often have you found that you could not cope with all the things that you had to do ?					
9.	In the last week how often have you been able to control your irritation in your life?					
10.	In the last week how often have you felt that you were on top of things?					
11.	In the last week how often have you been angered because of things that were outside of your control?					
12.	In the last week how					

	often have you found yourself thinking about things that you have to accomplish?					
13.	In the last week how often have you been able to control the way you spend your time?					
14.	In the last week how often have you felt difficulities were piling up high that you could not overcome them?					
15.	In the last week how often have you felt anxious or warried for no good reason ?					
16.	In the last week how often have you felt or harming your self?					
17.	In the last week how often have you felt hard to make decisions.					
18.	In the last week how often have you felt that you can not shake of these bad feelings no matter what you do?					

19.	In the last week how often have you lost interest in things that you find pleasureable?					
20.	In the last week how often have you felt bad or blamed your self that it is all my fate, karma/ grahachara					
21.	In the last week how often have you felt anger or resentful that god has inflicted this trouble on you for no fault of yours?					
22.	In the last week how often have you felt that there has been a significant drain on family financial resources?					

SCORE

NORMAL STRESS - 1-22

MILD STRESS - 23-42

MODERATE STRESS - 43-64

SEVERE ANXIETY - 65-86

REFERENCES

1. D. Arora, M. Anand, V. K. Katyal, V. Anand. Anxiety and well being among acute coronary syndrome patients: over time. JIAAP[Internet].2010 Jan 36(1):79-88.Available from:http :/www.medlind.nic.in/jak/i1/jakt10i1p79.pdf.
2. World Health Organization. Revised global burden of disease (Accessed June 29.Available at: http ://www. who.int/ heathinfo/ bodgbd/en.
3. Prevalence of heart disease. WHO report 2007.
4. Braunwald E. Cardiovascular medicine at the turn of the millennium: triumphs ,concerns and opportunities. N Engl J Med(Internet). 1997:1360-1369.
5. Roger L, Donald M, Jarret DB. Heart disease and stroke statistics. Circulation [Internet].2011;123e18-e209.:Available from:http://circ :ahajournal.org /content /123/4/e18.full.
6. Dr. Charles "Pat" Davis, MD, PhD, A board certified Emergency Medicine at UT Medical Branch and at UTHSCSA with over 250 publications. Pubmed 2021
7. Andrew Steptoe & Mika Kivimäki Nature Reviews Cardiology volume 9, pages360–370 (2012)
8. Baime, Michael J. Meditation and Mindfulness-In essentials of complementary and alternative medicine: Lippincott Williams and Wilkins;1999.
9. Gokhroo Rahul,Tyagi Sanjay,Dheeraj,Jain Gagan.Coronary artery disease in young Indian patients.Indian J cardiology.2009;8(12):8 – 15.
10. Soumithra K.Coronary Artery Disease in India.Journal of IMA [Internet] 2009;107(9):614-616.
11. Bantheer P,Kritpracha C.Anxiety and quality of life in patients with Myocardial Infarction.NMJ.2011;1:105-115.Available from ejournal.undip.ac.id/index.php/medians article/download/750/pdf.
12. Woldecherkos A,Shobeshi,Yinong Y-Xu,Bhatt CM.Anxiety worsens prognosis in patients with Coronary Artery Disease. JACC [Internet]. 2007. Available from: http://www.jacc.org/cgi.2007.
13. Lane D. The prevalence and persistence of depression and anxiety following Myocardial Infarction.Br J Health Psychol[Internet].2002;7:11-21.Available from: www.ncbi.nlm.nih.gov/pubmed/14596714.

14. Sparrow KL, Vikonas PS, Weiss. Symptoms of anxiety and Coronary Artery Disease.Circulation[Internet].1994;90(5):2225-2227.Available from:http ://www www. Workhealth.org/risk/rfbanx.html.

15. Woldecherkos A,Shobeshi,Yinong Y-Xu,Bhatt CM.Anxiety worsens prognosis in patients with Coronary Artery Disease. JACC [Internet]. 2007. Available from: http://www.jacc.org/cgi.2007.

16. Lane D. The prevalence and persistence of depression and anxiety following Myocardial Infarction.Br J Health Psychol[Internet].2002;7:11-21.Available from: www.ncbi.nlm.nih.gov/pubmed/14596714

17. Grossman, Niemann, Stefan Schmidt, Harald Walach. Mindfulness based stress reduction and health benefits- A meta analysis. Psycosom research [Internet] .2004;57:35-43.Available from:http ://www. ncbi.nlm. nih.gov/ pubmed/ 15256293.

18. Manzoni GM, Pagini F, Gianluca C.Efficacy of relaxation training.BMC psychiatry [Internet]. 2008;8(244):8-14.Available from: http :www. ncbi.nlm .nih.gov/PMC/articles/PMC 2427027.

19. Madhav Goyal, MD, MPH[1]; Sonal Singh, MD, MPH[1]; Erica M. S. Sibinga, MD, MHS[2]; Meditation Programs for Psychological Stress and Well-beingA Systematic Review and Meta-analysis. JAMA Intern Med. 2014;174(3):357-368. doi:10.1001/jamainternmed.2013.13018

20. Prevalence of coronary heart disease – United States, 2006–2010. *Morb Mortal Wkly Rep (MMWR)* 2011;60(40):1377–1381.

21. Ezzati M., Lopez A.D., Rodgers A. World Health Organisation; Geneva: 2004. Comparative Quantification of Health Risks. Global and Regional Burden of Disease Attributable to Major Risk Factors.

22. Polit DF, Hudger BD. Nursing research principles and methods.11th ed. Philadelphia. J.B Lippincott;2010.

23. Suresh K Sharma. Nursing research and statistics.1st ed.India.Elsevier;2010

24. Christensen PJ, Kenney JW. Nursing process, application of conceptual model. Philadelphia: CV Mosby Company; 1990

25. Gabriel R, Alonso M, Novella B,Javier MS. Epicardian population based cohort study in Myocardial Infarction.BMC public health [Internet] .2009; 9:360.Available from:http ://www.biomedcentral.com/content/pdf/1471-2458-9.360.pdf.

26. Rahul G, Sanjay T, Dheeraj, Gagan J.Coronary artery disease in young Indian patients.Indian J cardiology.2009;8(12):8 – 15.

27. Gikas A, Sortiropoulos A, Panagiotakos D, Pastromas A, Pappas A.Prevalence of myocardial infarction and conventional risk factors in Greekadults.QJM [Internet].2008 April[cited2008 July 4] ;101(9):705 – 712.Available from doi;10.1093/qjmed/hin076.

28. World Health Organization.WHO report.Decreasing risk promoting healthy life.Geneva.2008;7-

29. Leeder SR.The challenge of CVD in developing economics. A race against time.2004;36(4):119.

30. Asghar KM, Karamat M, Hafizullah M, Nazar Z, Fahim M.Frequency of anxiety and psychosocial stressful events in Myocardial Infarction.J Ayub Med Coll

31. Department of Epidemiology and Public Health, University College London, London, WC1E 6BT, United Kingdom; email: a.steptoe@ucl.ac.uk, m.kivimaki@ucl.ac.uk4:337-354

32. Jean-ChristopheChauvet-Gelinier[ab]BernardBonin[ab] Stress, anxiety and depression in heart disease patients: A major challenge for cardiac rehabilitation. https://doi.org/10.1016/j.rehab.2016.09.002

33. harplin GR.Jones SB, Hancock B, Knott VE, Bowden JA, Whitford HS.et al.Mindfulness based cognitive therapy.Med J Aust[Internet].2010[cited 2010 Sep];6(193):[about 3 p].Available from PMID:21542452.

34. Goldin P, Ziy M,Jazaieri H, Hahn K, Gross JJ. Mindfulness Based Stress Reduction versus exercise in social anxiety.Soc.Conqn Affect Neurosci [Internet]2012[cited 2012 May 13]:[about 3 p].Available from PMID 22586252.

35. Olivo EL, Lavelle BD, Wren A, Fang Y, Mechmet C.Feasibility and effectiveness of a brief meditation based stress management. Psychol Health Med[Internet].2009;14(5):513-2.Available from: http://www.ncbi.nlm.nih.gov/ pubmed/19844830.

36. Warber SL, Ingerman S,Moura VL, Wounder J, Durda K, Smith K et al.Healing heart-a randomized study.Explore NY[Internet].2011;7(4):223-33.Available from: http://www.ncbi.nih.gov/pubmed/2172455.

37. Manoj Sharma, MBBS, MCHES, PhD, FAAHB, Sarah E. Rush, MA, CHES Mindfulness-Based Stress Reduction as a Stress Management Intervention for Healthy Individuals: A Systematic Review First Published July 22, 2014 Research Article PubMed https://doi.org/10.1177/2156587214543143

MEDITATION

Meditation, used for many years in Eastern cultures, is now widely accepted in this country as a relaxation technique. The goal of meditative procedures, both religious and therapeutic, is to quiet the mind (essentially, to relax thought).Meditation given for no longer than 20 minutes in the morning after awakening and then again in early evening before dinner.

The following steps are included:

1. Sit upright with spine straight, either cross legged or sitting on a firm chair with both feet on the floor, uncrossed.
2. Close the eyes slowly after looking a few feet ahead.
3. Concentrate on the inhalation and exhalation of breath for the first 5 minutes.
4. After 5 minutes take a deep breath and release it slowly. Repeat this for five times.
5. Focus on the entry and passage of air through the respiratory tract.

6. Give attention to your own body sounds
7. Contemplate on any particular sound inside or outside the room and feel the sounds.
8. Again take a deep breath and release it slowly, repeat this procedure for five times.
9. Take inhalation and exhalation normally and slowly open the eyes.